

No. BCTC-FYC190702016R

BCTC

Date: July.02, 2019

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Applicant Address

The submitted sample and sample information was/were submitted and identified by/on the behalf BCTC of the client

Sample name Sample received date **Testing period**

June.21,2019 June.21,2019 - July.02, 2019

Test requested

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1. As specified by client, to screen Lead(Pb), Cadmium(Cd), Mercury(Hg), Chromium(Cr) and Bromine(Br) in the submitted sample(s) by XRF.

2. As specified by client, when screening results exceed the XRF screening limit in IEC 62321-3-1:2013, further use of chemical methods are required to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs) in the submitted samples.

3. As specified by client, to test the Di-isobutyl phthalate(DIBP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Bis(2-ethyl(hexyl) phthalate)(DEHP)in the submitted sample(s).

According to the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863

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*****For more detailed information, please refer to the next page*****

Tested by Xingping Li BCIC



Lab:Shenzhen BCTC Testing Co.,Ltd.

Add:BCTC Building & 1-2F,East of B Building,pengzhou Industrial,Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao 'an District, Shenzhen, China Tel: (86)0755-33229357 Fax: 0755-33229357

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Test Method:

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A. Screening test by XRF spectroscopy

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XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

BCIL	Limit of IEC 62321-3	MDL		
Element	Polymers and metals	Composite material	Polymers	Other material
Pb	BL≤(700-3σ) <x <(1300+3σ)<br="">≤OL</x>	BL≤(500-3σ) <x <(1500+3σ)<br="">≤OL</x>	10 mg/kg	50 mg/kg
Cd	BL≤(70-3σ) <x <(130+3σ)<br="">≤OL</x>	LOD≤(50-3σ) <x <(150+3σ)<br="">≤OL</x>	10 mg/kg	50 mg/kg
Hg	BL≤(700-3σ) <x <(1300+3σ)<br="">≤OL</x>	BL≤(500-3σ) <x <(1500+3σ)<br="">≤OL</x>	10 mg/kg	50 mg/kg
Cr	BL≤(700-3σ)< X	BL≤(500-3σ)< X	10 mg/kg	50 mg/kg
Br	BL≤(300-3σ)< X	BL≤(250-3σ)< X	10 mg/kg	50 mg/kg
Note:	OFTC	BETC		

Note:

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BCTC -BL = Under the XRF screening limit

SCIC -OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol "X" marks the region where further investigation is necessary

 -3σ = The reproducibility of analytical instruments

-LOD= Detection limit

-"--" = Not regulated.

B. Chemical Test	BCTC			
Test Item(s)	Test Method	Measured Equipment(s)	MDL	Limit
Lead (Pb)	IEC 62321-5:2013 Ed.1.0	ICP-OES	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013 Ed.1.0	ICP-OES	2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017	ICP-OES	2 mg/kg	1000 mg/kg
	IEC 62321-7-1:2015 Ed.1.0			1000 mg/kg
Hexavalent Chromium Cr(VI)	IEC 62321-7-2:2017 Ed.1.0	UV-VIS	8 mg/kg	1000 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015 Ed.1.0	GC-MS	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015 Ed.1.0	GC-MS	5 mg/kg	1000 mg/kg
Phthalates	IEC 62321-8:2017 Ed.1.0	GC-MS	50 mg/kg	1000 mg/kg

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倍测检测 BCTC TEST

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Test Results:

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Description White plastic	Pb Cd Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd	Unit (mg/kg) BL BL BL BL BL BL BL	Unit (mg/kg) / / / / / / /	PASS
TC	Cd Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd	BL BL BL BL BL		PASS
TC	Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd	BL BL BL BL		PASS
-	Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd	BL BL BL		
-	Br(PBBs&PBDEs) Pb Cd	BL BL	 	
-	Pb Cd	BL	/	
-	Cd	13 m	/	1
-			1	-
	Hg	BL	BCT	PASS
-	Cr(Cr(VI))	BL	/	
	Br(PBBs&PBDEs)	BL BL	, ,	arte
	Pb	BL	. /	BLIT
	Cd	BL	, /	-
Brown leather		And the second second	, /	PASS
	-			
	100 F		/	-
			. /	
F	Cd	BL	/	BCIN
Brown coil		BL	/	PASS
0000	-	BL	1	
Carlo -	Br(PBBs&PBDEs)	BL	/	C.
	Pb	BL	/ 80	13 C
F	Cd	BL	/	
Silver battery	Hg	BL	/	PASS
	Cr(Cr(VI))	BL	1	
	Br(PBBs&PBDEs)	BL	BCICI	-
E	Pb	BL	/	
	Cd	BL	/	BCTC
Brown EVA	Hg	BL	/	PASS
-10	Cr(Cr(VI))	BL	/]
361~	Br(PBBs&PBDEs)	BL	/	
	Brown coil	Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd Brown coil Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd Brown coil Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd Silver battery Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd Hg Cd Hg Cd Hg Cr(Cr(VI)) Br(PBBs&PBDEs)	Hg BL Cr(Cr(VI)) BL Br(PBBs&PBDEs) BL Pb BL Cd BL Cd BL Cr(Cr(VI)) BL Brown coil Hg BL Cd BL C Brown coil Hg BL Cr(Cr(VI)) BL C Br(PBBs&PBDEs) BL C Silver battery Hg BL Cd BL C Cr(Cr(VI)) BL B Br(PBBs&PBDEs) BL C Br(PBBs&PBDEs) BL C Gd BL C Gd BL C Gd BL C Br(PBBs&PBDEs) BL C Gr(Cr(VI)) BL C Br(PBBs&PBDEs) BL C	Hg BL / Cr(Cr(VI)) BL / Br(PBBs&PBDEs) BL / Pb BL / Cd BL / Brown coil Hg BL / GCd BL / / Brown coil Hg BL / GCd BL / / Br(PBBs&PBDEs) BL / / Br(PBBs&PBDEs) BL / / Silver battery Hg BL / GCd BL / / Br(PBBs&PBDEs) BL / / Br(PBBs&PBDEs) BL / / Brown EVA Hg BL / GCd BL / / Br(PBBs&PBDEs) BL / / Br(PBBs&PBDEs) BL / / Br(PBBs&PBDEs) BL / /

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	Ph	BI	1	
				-
Green nch				PASS
- C.				FA00 6
· · · ·				-
051		,		
BC				
	ELC 1 %			PASS
	-			PASS
		BL ,	1	
BCIT		7	1	
			ecic	-
	(3. m)		1	
Silver connector			/	PASS
			/	De
		100 million (100 m	/	
BCTC			/	-
	Cd	BL	1	
LED	Hg	BL	/ 84-	PASS
	Cr(Cr(VI))	BL	1	
· · · · ·	Br(PBBs&PBDEs)	BCILI	1	BCI
	Pb	BL	1	
25	Cd	BL	1 1	
Capacitance	Hg	BL	/	PASS
	Cr(Cr(VI))	BL	1 8	CIC
	Br(PBBs&PBDEs)	/	1	
	Pb	BL	1	
BCIL	Cd	BL	1	
Resistance	Hg	BL	212.00	PASS
	Cr(Cr(VI))	BL	/	
	Br(PBBs&PBDEs)	1	1	BCTC
	Pb BC1	BL	/	
	Cd	BLaCIC	/	
Switch	Hg	BL	/	PASS
	Cr(Cr(VI))	BL	PLACE	
	Br(PBBs&PBDEs)	1	1	
	Resistance	Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Br(PBBs&PBDEs) Br(PBBs&PBDEs) Silver connector Hg Cd Br(PBBs&PBDEs) Br(PBBs&PBDEs) Br(PBBs&PBDEs) Br(PBBs&PBDEs) Cd Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd Hg Cd Hg Cr(Cr(VI)) Br(PBBs&PBDEs) Pb Cd Hg Cr(Cr(VI))	Green pcbCdBLGreen pcbHgBLCr(Cr(VI))BLBr(PBBs&PBDEs)/ICHgBLCdBLCdBLCdBLCr(Cr(VI))BLBr(PBBs&PBDEs)/Silver connectorHgBLCdBLCdBLCdBLCdBLCdBLCdBLCdBLCdBLCr(Cr(VI))BLBr(PBS&PBDEs)BLCdBLCdBLCf(Cr(VI))BLBr(PBS&PBDEs)/CdBLCr(Cr(VI))BLCdBLCdBLCr(Cr(VI))BLBr(PBS&PBDEs)/PbBLCdBLCdBLCdBLCdBLCdBLCdBLCr(Cr(VI))BLBr(PBS&PBDEs)/PbBLCdBLCdBLCdBLCdBLCdBLCdBLCdBLCdBLHgBLCdBLHgBLCdBLHgBLCdBLHgBLCdBLHgBLCdBLHg <td< td=""><td>Green pcb Cd BL / Hg BL / Cr(Cr(VI)) BL / Br(PBBs&PBDEs) / / IC Pb BL / Cd BL / / IC Hg BL / Cd BL / / Cd BL / / IC Hg BL / Cr(Cr(VI)) BL / Br(PBs&PBDEs) / / / Silver connector Hg BL / Gr(Cr(VI)) BL / / Br(PBs&PBDEs) BL / / Cd BL / / LED Hg BL / Cd BL / / Cd BL / / Capacitance Hg BL / Cd BL / /</td></td<>	Green pcb Cd BL / Hg BL / Cr(Cr(VI)) BL / Br(PBBs&PBDEs) / / IC Pb BL / Cd BL / / IC Hg BL / Cd BL / / Cd BL / / IC Hg BL / Cr(Cr(VI)) BL / Br(PBs&PBDEs) / / / Silver connector Hg BL / Gr(Cr(VI)) BL / / Br(PBs&PBDEs) BL / / Cd BL / / LED Hg BL / Cd BL / / Cd BL / / Capacitance Hg BL / Cd BL / /

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Tested Item(s)	Results Unit (mg/kg)	
	1-13	
Di-isobutyl phthalate(DIBP)	N.D.	
CAS #:84-69-5	N.D.	
Dibutyl phthalate(DBP)	N.D.	
CAS #:84-74-2	N.D.	
Benzylbutyl phthalate(BBP)	N.D.	
CAS #:85-68-7	N.D.	
Bis(2-ethyl(hexyl) phthalate)(DEHP)	N.D.	
CAS #:117-81-7	N.D.	

Note:

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-" / "= Not conducted.

-Negative = Absence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is less than $0.1\mu g/cm^2$ with $50cm^2$ sample surface area used.

-Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.13μ g/cm² with 50cm² sample surface area used.

Remark:

- The screening results are only used for reference.

- When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br Exclusively; When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

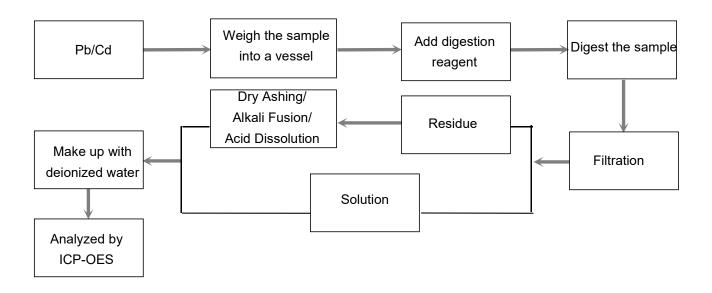
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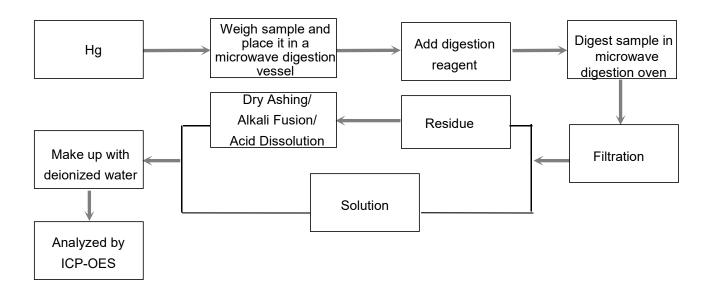
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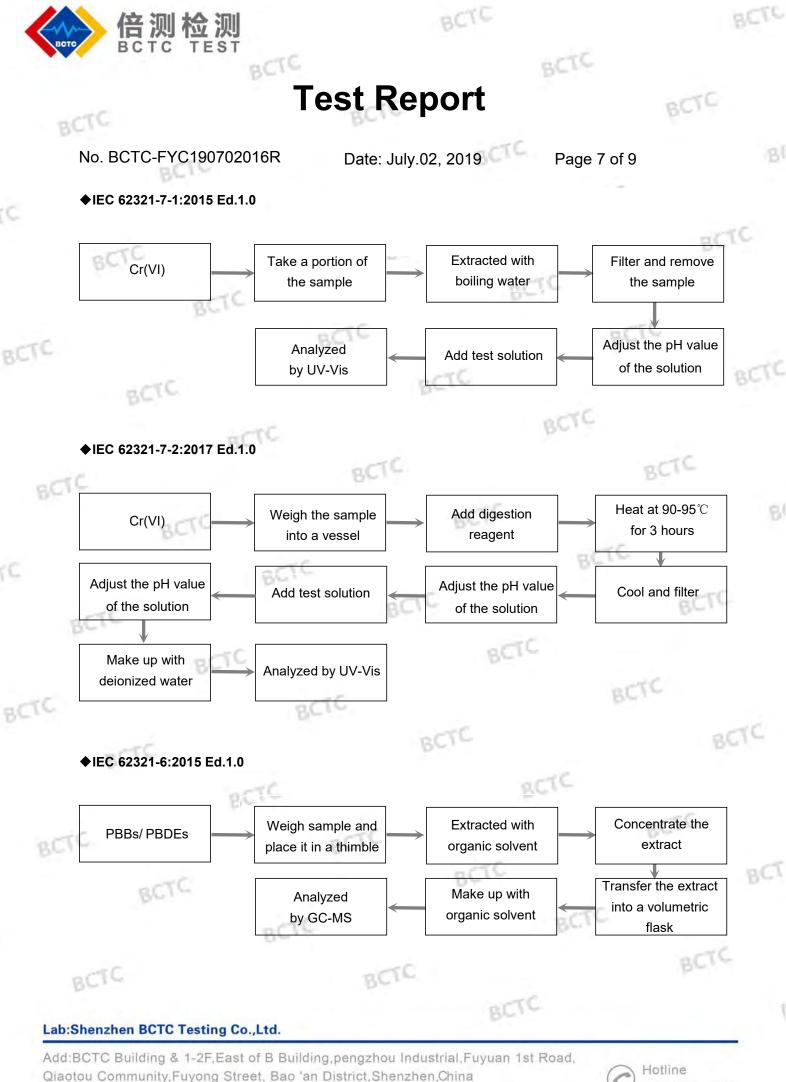
Test Process:

The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury. ♦IEC 62321-5:2013 Ed.1.0



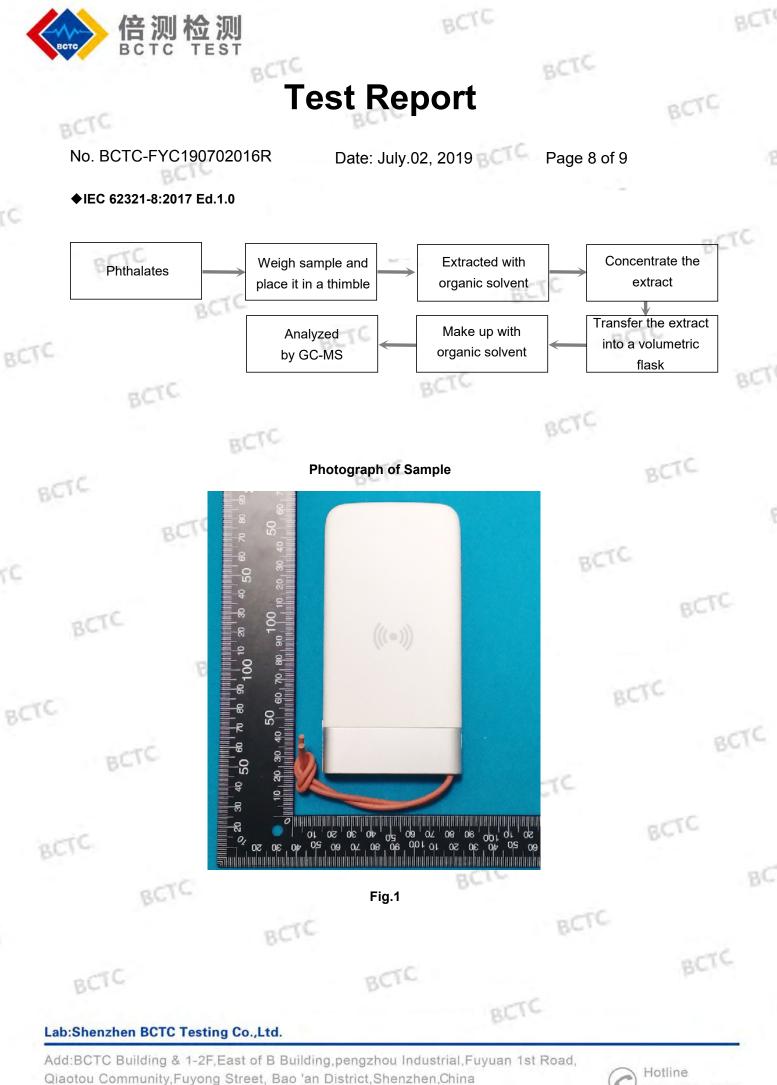
♦IEC 62321-4:2013+AMD1:2017





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Photo(s) of the tested component(s)

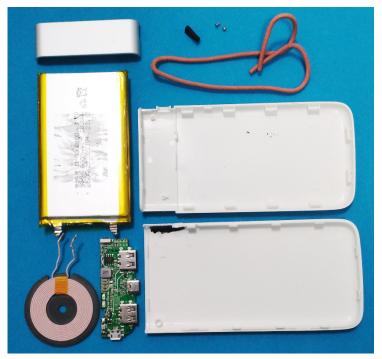


Fig.2





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